

REMARKS

Claim 4 has been canceled, without prejudice, rendering the objection to the drawings and the § 112 rejection moot. Withdrawal is requested.

Independent claim 11 stands rejected under § 103 on the basis of Koji et al. and Shimano. In the invention of amended claim 11, the syringe is prepared for dropping the liquid crystal by pushing the piston down, and the liquid crystal replenishing source replenishes the liquid crystal into the syringe every time after the liquid crystal is supplied to the substrate. An amount of the liquid crystal in the syringe is maintained constant at a point in time when the liquid crystal is supplied to the substrate.

On the other hand, in Koji, the sleeve 5 is prepared for dropping the liquid crystal by rotating the shaft 4, and the fine feeding mechanism 8 supplies the liquid crystal into the sleeve 5. This fine feeding mechanism 8 supplies the liquid crystal into the sleeve 5 when the shaft 4 is rotating, i.e., the liquid crystal is being supplied to the substrate 1, so that the space between the sleeve 5 and the shaft 4 is filled up with liquid crystal.

The liquid crystal replenishing source of amended claim 11 replenishes the liquid crystal in the syringe every time the liquid crystal is supplied to the substrate. As shown in Table 3 in the present specification, this is because it is necessary to place the same amount of liquid crystal in the syringe at each filling, in order to prevent the supply amount of the liquid crystal to the substrate from changing at each application.

The invention of claim 1 differs from the invention of Yamaki et al. in the manner in which the external force is applied (i.e., how the gas is supplied). Indeed, Yamaki et al. do not even address the problem solved by the present invention, in that the defined amount of the resin in one step is supplied with high precision by dropping down the resin adhered at the top of the nozzle, as in the invention of claim 1. Withdrawal of the rejection of claim 1, and dependent claims 2, 3 and 5 is requested.

Independent claim 6 also stands rejected under § 103 on the basis of Yamaki et al. Applicants traverse this rejection, as well.

In the invention of claim 6, liquid crystal is supplied to the substrate (an open space). In contrast, in the invention of Yamaki et al., the resin is supplied into the mold cavity (a closed space). Thus, the invention of claim 6 and the invention of Yamaki et al. are different.

Also, in the invention of claim 6, in order to supply the same amount of liquid crystal to the substrate every time, a defined amount of the liquid crystal is supplied into the syringe after the liquid crystal from the previous application is supplied to the substrate by the defined amount. As shown in Table 3 in the present specification, this is because the error in the defined value of the supply amount of the liquid crystal expands in response to the amount of the liquid crystal in the syringe when the syringe starts to supply the liquid crystal to the substrate. In other words, if the amount of liquid crystal in the syringe at the start of supply to the substrate is different for every application, the amount of liquid crystal

supplied to the substrate can change for every application. For this reason, in the invention of claim 6, the amount of liquid crystal in the syringe at the start of each application is the same.

On the other hand, in Yamaki et al., when and what amount of the resin is supplied to the nozzle is not described at all, and there is no suggestion to have the same amount of resin in the nozzle when the resin starts to fill in the mold cavity, either. Withdrawal of the rejection of claim 6 is respectfully requested.

Independent claim 7 stands rejected under § 103 on the basis of Koji et al. and Yamaki et al. Claim 7 has been amended to more clearly overcome this rejection, and applicants traverse for the following reasons. In amended claim 7, in order to drop the liquid crystal adhered to the outside of the surface of this liquid crystal supply needle down to the substrate, the air supplying means blows gas against the liquid crystal supply needle. For this purpose, the air supplying means is arranged around the outside of the liquid crystal supply needle.

On the other hand, in the invention of Koji '256, the air supplying means does not blow a gas against the nozzle, like the invention of amended claim 7.

In the invention of Yamaki et al., in order to prevent the resin from solidifying in the mold cavity when filling, the gas supplying means supplies the gas that gives plasticity to the surface of the resin. This gas supplying means supplies the gas from inside of the nozzle, in order to supply the gas into the mold cavity efficiently. Thus, the invention of

Yamaki et al. differs from the invention of amended claim 7 in respect to the purpose of the air supplying means, the position in which the air supplying means is arranged, and the purpose for which the gas is used. Withdrawal of the rejection of claim 7 and dependent claims 8-10 is respectfully requested.

Claims 11-12 stand rejected on the basis of Koji et al. and Shimano.

Applicants traverse for the following reasons.

In the invention of Shimano '333, the syringe 2 is prepared for dropping viscous liquid to the outside by compressed air. In the invention of Shimano, the pressure sensor 7 detects rising pressure in the syringe 2 (the space 30), which changes in response to the amount of liquid which remains in the syringe 2 when the liquid in the syringe 2 is compressed by air. The controller 23 controls the time, so as to continue to compress the liquid in the syringe 2 in response to the rising pressure. In this manner, in the invention of Shimano, in order to avoid changing the supply amount of the liquid for every application, complicated composition and control are required.

In the invention of amended claim 11, in order to avoid changing the supply amount of the liquid crystal to the substrate every time, the piston of the syringe is only pushed down similarly at each step after the liquid crystal replenishing source replenishes the liquid crystal, so that the same amount of liquid crystal is in the syringe each time the liquid crystal is initially supplied to the substrate.

As mentioned above, in the invention of amended claim 11, the supply amount of liquid crystal to the substrate is not changed for every application by simple composition and control, compared with the proposed combination of Shimano and Koji et al. Withdrawal of the rejection of independent claim 11 and dependent claim 12 is respectfully requested.

Claim 13 has been amended based on the description that the plunger system syringe shown in Fig. 2 may be employed as the syringe, in page 23, lines 1-2. Claim 13 is allowable for the reasons given with respect to independent claim 11.

For the foregoing reasons, applicants believe that this case is in condition for allowance, which is respectfully requested. The examiner should call applicants' attorney if an interview would expedite prosecution.

Respectfully submitted,

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